



# UNITED STATES PATENT AND TRADEMARK OFFICE

8  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/526,466	03/03/2005	Tadashi Shibata	Q86580	8164
23373	7590	10/04/2007	EXAMINER	
SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037			MAKI, STEVEN D	
ART UNIT		PAPER NUMBER		
1733				
MAIL DATE		DELIVERY MODE		
10/04/2007		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/526,466	SHIBATA ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Steven D. Maki	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### **Status**

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### **Disposition of Claims**

- 4) Claim(s) 1-16 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-16 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### **Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### **Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### **Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 030305.
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application
- 6) Other: \_\_\_\_.

1) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

- (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
- (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3) **Claims 1 and 4-14 are rejected under 35 U.S.C. 102(a), (b) as being anticipated by Europe 561 (EP 1179561), Science and Technology of Rubber being cited as evidence to show inherency as to claim 5.**

Europe 561 discloses a pneumatic tire having a composition comprising 100 parts rubber such as natural rubber or styrene-butadiene rubber (SBR), reinforcing filler such as **silica** and carbon black (e.g. HAF, ISAF and SAF), and 0.1-10 parts ester of **(i) aliphatic polyvalent carboxylic acid or anhydride thereof such as the preferred maleic anhydride and (iii) (poly)oxyalkylene derivative.** The ester is represented by the formula described at paragraphs 14-16. The slippage between rubber molecules is increased by using the ester as an additive in the rubber composition without degrading the properties of the cured rubber composition. The silica has a N2SA of 50-250 m<sup>2</sup>/g. Other additives such as processing oil may be included in the composition. At

paragraph 55, Europe 561 describes using 100 parts natural rubber and 55 parts carbon black HAF. At paragraph 59, Europe 59 describes using 100 parts SBR, 30 parts carbon black ISAF and 30 parts silica. Europe 561 specifically discloses using the composition for a tire tread.

The claimed tire is anticipated by Europe 561. See paragraphs 7-8, 14-16, 20-26, 28, 34-35, 38-44 and examples. With respect to claim 5, Europe 561 discloses using HAF and ISAF. The inherent properties of HAF (N330) and ISAF (N220) are described by Science and Technology of Rubber at Tables XII and XIII.

**4) Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Europe 561 and optionally Shiina (US 2002/0049294) and/or Europe 613 (EP 738613).**

Europe 561, which is discussed above, is considered to anticipate claims 1 and 10. In any event, it would have been obvious to one of ordinary skill in the art to provide Europe 561's tire such that the tread rubber comprises 100 parts rubber component comprising conjugated diene rubber, filler comprising 10% mass or more of silica based on the whole fillers wherein the silica has a N2SA of 180-270 m<sup>2</sup>/g and 0.1-10 mass parts of a partial ester compound of maleic anhydride and a (poly)oxypropylene derivative since (1) Europe 561 teaches a pneumatic tire having a composition comprising 100 parts rubber such as natural rubber or styrene-butadiene rubber (SBR), reinforcing filler such as silica and carbon black (e.g. HAF, ISAF and SAF), and 0.1-10 parts ester of (i) aliphatic polyvalent carboxylic acid or anhydride thereof such as the preferred maleic anhydride and (iii) (poly)oxyalkylene derivative (paragraphs 14-16) so

that the slippage between rubber molecules is increased by using the ester as an additive in the rubber composition without degrading the properties of the cured rubber composition, (2) Europe 561 teaches using the rubber composition for the tread of the tire and suggests using silica having a N2SA of 50-250 m<sup>2</sup>/g and optionally (2) Shiina and/or Europe 613 suggest using a rubber composition comprising silica in a tread of tire so that heat generation is reduced. As to silica, Shiini teaches using 30 parts silica or less in the tire tread wherein the silica has a N2SA of 160-260 m<sup>2</sup>/g. As to silica, Europe 613 suggests using 20-95 parts silica in the cap of the tire tread.

As to claims 2 and 3, it would have been obvious to use the claimed hydrazide compound in the rubber composition since Shiina teaches using hydrazide compound in the tire tread to suppress the decrease in modulus due to reversion under over-cure and deterioration in the low heat generating property and abrasion resistance (paragraphs 48-165, especially paragraphs 65, 164 and 165).

As to claim 4, note Europe 561's and the optionally Shiina and/or Europe 613's teaching to use natural rubber.

As to claims 5-6 and 13-14, note Europe 561's and optionally Shiina and/or Europe 613's teachings as to types and amounts of silica and carbon black.

As to claims 7-9, Europe 561 teaches using the composition for a tire tread, the optional Shiina and/or Europe 613 teach a heavy duty / truck tire tread and the optional Europe 613 teaches using a cap/base construction for the tread.

As to claim 11, see paragraphs 14-16 of Europe 561.

As to claim 12, note Europe 561's and the optionally Shiina and/or Europe 613's teaching to use SBR.

**5) Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Europe 561 and optionally Shiina (US 2002/0049294) and/or Europe 613 (EP 738613) as applied above and further in view of Hashimoto (US 6,103,808).**

As to claim 15, it would have been obvious to one of ordinary skill in the art to include the claimed softening agent in Europe 561's rubber composition since (1) Europe 561 teaches that other additives such as processing oil (softening agent) may be included in the rubber composition and (2) Hashimoto, directed to safety concerns as to using oil as softening agent, suggests using a oil having a DMSO extract less than 3% by weight for tire rubber compositions.

**6) Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Europe 561 and optionally Shiina (US 2002/0049294) and/or Europe 613 (EP 738613) as applied above and further in view of Hayashi et al (US 3,927,144).**

As to claim 15, it would have been obvious to one of ordinary skill in the art to include the claimed petroleum base resin in Europe 561's rubber composition since (1) Europe 561 teaches that other additives such as processing oil (softening agent) may be included in the rubber composition and (2) Hayashi et al suggests using a petroleum resin having a softening point of 8-150 degrees C in a rubber composition for a tread of a large truck tire to improve cut resistance.

Remarks

7) Applicant is requested to provide a copy of the reference crossed off the PTO 1449 as a copy of that reference is not readily available to the examiner. The remaining references are of interest.

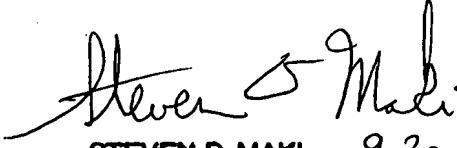
8) No claim is allowed.

9) Any inquiry concerning this communication or earlier communications from the examiner should be directed to Steven D. Maki whose telephone number is (571) 272-1221. The examiner can normally be reached on Mon. - Fri. 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Steven D. Maki  
September 30, 2007

  
STEVEN D. MAKI  
PRIMARY EXAMINER  
9-30-07